**AWS Elastic Beanstalk**

AWS Elastic Beanstalk is a Platform as a Service (PaaS) offered by Amazon Web Services (AWS) that allows you to ***deploy, manage, and scale web applications*** and services easily. It abstracts away much of the infrastructure management, making it simpler for developers to focus on their code and application logic rather than dealing with the underlying infrastructure setup.

**Key features:**

**1. Easy Deployment:** Elastic Beanstalk handles the deployment of your application, including provisioning of resources like virtual machines, load balancers, databases, etc.

**2. Multiple Language and Platform Support:** It supports a variety of programming languages and platforms such as Java, .NET, PHP, Node.js, Python, Ruby, Docker, and more.

**3. Auto Scaling:** Elastic Beanstalk can automatically scale your application based on traffic load. You can configure auto-scaling rules to adjust the number of instances in your environment.

**4. Load Balancing:** It provides load balancing out of the box to distribute incoming traffic across multiple instances, improving reliability and availability.

**5. Managed Infrastructure:** AWS handles the underlying infrastructure maintenance, including updates, patches, and monitoring.

**6. Environment Configuration:** You can define environment configurations, including instance types, database settings, environment variables, and more.

**7. Logging and Monitoring:** Elastic Beanstalk integrates with AWS services like Amazon CloudWatch for monitoring and logging, allowing you to track the performance and health of your application.

**8. Customization:** While Elastic Beanstalk simplifies deployment, it still offers the flexibility to customize infrastructure settings if needed. You can customize the environment using configuration files and scripts.

Note:

* End-to-end web application management service in AWS.
* In AWS, Elastic Beanstalk provides Platform as a Service (PaaS).
* Easily we can run our web applications on AWS cloud using Elastic Beanstalk service.
* We just need to upload our project code to Elastic Beanstalk it will take care of deployment
* Elastic Beanstalk will take care of software and servers which are required to run our application.
* Elastic Beanstalk will take care of deployment, capacity provisioning, load balancer and auto scaling etc.
* To deploy one java web application manually we need to perform below operations

1) Create Security Group

2) Create Network

3) Create Virtual Machine (s)

4) Install Java software in Virtual machine

5) Install Webserver to run java web application

6) Deploy application to server

7) Re-start the server

8) Create LBR

9) Create AutoScaling etc...

* AWS providing infrastructure, we are creating platform using AWS infrastructure to run our java application (IaaS Model)
* Instead of we are preparing platform to run our application, we can use Elastic Beanstalk service to run our web applications.
* Elastic Beanstalk is providing Platform as a service.

**Create Sample Application:**

* Create Application
* Choose the name
* Select the platform

**Below Beanstalk events**

* Environment Creation started
* S3 bucket created to store the code
* Security Group
* VPC
* EC2 instances
* Webserver installation
* Load Balancer
* Autoscaling
* Cloud watch

Ex URL : http://webapp1-env.eba-rc8b64vg.ap-south-1.elasticbeanstalk.com/

**Advantages with Elastic Beanstalk**

1) Fast and simple to begin

2) Developer productivity

3) Impossible to outgrow

4) Complete resource control

**Elastic Beanstalk Pricing**

There is no additional charge for Elastic Beanstalk. You pay for Amazon Web Services resources that we create to store and run your web application, like Amazon S3 buckets and Amazon EC2 instances.

Procedure to deploy java-spring-boot-application

1) Create one application in Beanstalk

2) Choose Platform as Java

3) Select Upload Your Code option and upload spring-boot-jar file

4) Go to our application environment [provide all details as shown]

Note: After changing the port Environment will be re-started

URL : http://sbrestapp-env.eba-5fsapphh.ap-south-1.elasticbeanstalk.com/welcome

**Application Versions**

In Beanstalk we can maintain multiple versions of our application

sb-rest-api-v1.jar

sb-rest-api-v2.jar

sb-rest-api-v3.jar

**We can deploy particular version of jar file based on demand**